DOCUMENT RESUME

ED 455 341 UD 034 326

TITLE	Gender Differences in Educational Achievement within Racial and Ethnic Groups. ERIC Digest Number 164.
INSTITUTION	ERIC Clearinghouse on Urban Education, New York, NY.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
REPORT NO	EDO-UD-01-3
ISSN	ISSN-0889-8049
PUB DATE	2001-08-00
NOTE	4p.
CONTRACT	ED-99-CO-0035
AVAILABLE FROM	ERIC Clearinghouse on Urban Education, Institute for Urban and Minority Education, Box 40, Teachers College, Columbia University, New York, NY 10027. Tel: 800-601-4868 (Toll Free); Web site: http://www.eric-web.tc.columbia.edu.
PUB TYPE	ERIC Publications (071) -- ERIC Digests in Full Text (073)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	*Academic Achievement; Advanced Placement; College Preparation; Course Selection (Students); Educational Attainment; Elementary Secondary Education; Equal Education; Graduation; Higher Education; Minority Group Children; *Racial Differences; *Sex Differences; Standardized Tests; Test Bias
IDENTIFIERS	ERIC Digests

ABSTRACT

Educational Testing Service (ETS) research highlights more similarities than variations in gender differences among student racial/groups, though variations exist in how the differences are manifested. This digest presents highlights from Richard Coley's findings in "Differences in the Gender Gap: Comparisons across Racial/Ethnic Groups in Education and Work." Coley's review covered results on the National Assessment of Educational Progress over the past decade. This digest also presents information about gender differences from a sample of high school students who intended to enroll in college. Overall, the issue of gender difference in academic outcomes is complicated. Lack of conclusive findings about a gender gap in achievement, as measured by standardized tests, suggests that there is no systematic disenfranchisement of students by sex, although traditional gender differences in course selection and subject-specific achievement persist. Differences in educational access and attainment among students of different races/ethnicities are more apparent, with whites far more likely to take college preparatory courses and complete college. Despite efforts to ensure test fairness, student differences inevitably render some tests unfair. Research indicates that more intensive effort is needed to eliminate educational inequities, particularly among black and Hispanic males who lag behind females in college completion. (SM)

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ERIC Clearinghouse on Urban Education
August 2001

UD034326

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ERIC CLEARINGHOUSE ON URBAN EDUCATION

DIGEST

Number 164, August 2001 EDO-UD-01-3 ISSN 0889 8049

GENDER DIFFERENCES IN EDUCATIONAL ACHIEVEMENT WITHIN RACIAL AND ETHNIC GROUPS

The effort to provide an equitable education to all students has led to extensive research on the effects of racial and ethnic differences, and of gender, on access, learning, and achievement. It has also led to great debate about which student population has been most shortchanged, with the argument about gender inequities perhaps most fierce. The impact of ethnicity on gender differences had been only minimally considered by researchers, however, until the Educational Testing Service (ETS) began looking at the topic several years ago, first with a study on test taking (Willingham & Cole, 1997) and now with a report on a variety of education and employment measures (Coley, 2001).

The ETS publications, while demonstrating generally that there are "more similarities than variations in gender differences among racial/ethnic groups" (Coley, 2001, p. 3) present statistics showing some interesting twists in the way the differences are manifested. They also raise some questions about educational equity that transcend the issue of gender fairness. Thus, as part of an ERIC Clearinghouse on Urban Education series consisting of facts about specific student groups, this digest presents highlights from the education findings in Richard Coley's *Differences in the Gender Gap: Comparisons Across Racial/Ethnic Groups in Education and Work.*

Research Findings

National Assessment of Educational Progress

ETS's review (Coley, 2001) of gender differences in elementary and secondary education within racial and ethnic groups covered student results on the various tests of the National Assessment of Educational Progress (NAEP) in several years over the last decade, administered to a nationally representative sample of students at three grade or age levels. The gender gap varied only slightly across the three years reviewed. These are the findings from the most recently administered tests:

Reading. Grades 4, 8, and 12. In 1998 females scored higher than males across all racial and ethnic groups, with the gap widening for most groups as the students progressed through school.

Writing. Grades 4, 8, and 12. Again, females scored higher than males across all racial and ethnic groups in 1998.

Science. At age 9, there were no statistically significant score differences in 1996 between males and females in all ethnic groups: black, Hispanic, Asian/Pacific Islander, and white. At age 13, white males scored higher than white females, while the other groups demonstrated no gender difference. At age 17, white males again outscored white females, Hispanic males outscored Hispanic females, and blacks and Asian/Pacific Islanders still exhibited no gender gap.

Mathematics. At grade 4, white males scored higher than white females in 1996; there was no gender difference within the other groups. At grades 8 and 12, no group demonstrated a gender gap.

College Preparation

The information about gender differences presented in the section below on high school course taking is based on a sample of high school students who intended to enroll in college; the findings, therefore, are not reflective of the U.S. student population at large. The data on students in advanced placement classes cover all high school students.

High School Course Taking. Among high school students who took the ACT college admissions test in 1999, more females than males in all racial and ethnic groups (a difference of between 1 and 3 percentage points overall) took a core college preparatory curriculum, with the greatest difference between black males and females (a difference of 7 percentage points).

Similarly, among high school seniors who took the SAT I: Reasoning Test for college admission in 1999, 55 percent of females and 46 percent of males overall took 20 or more years of courses in six core academic subjects. The gender difference was greater among American Indian, Asian/Pacific Islander, and white students; smaller among Hispanics and blacks. The gender gap in mathematics course taking has virtually closed for all groups except Hispanics: Hispanic males still took more math than females but the difference has been lessening over the last decade. The findings for natural science course taking are similar. Further, among Hispanics (who are disaggregated into three groups for this survey), the gap closed between Mexican males and females; within the other two groups—Puerto Rican and Latin American, South American, Central American, or Other Hispanic—more males than females took four years of science.

Advanced Placement. The Advanced Placement (AP) Program, which enables high school students to take courses that earn college credits, has grown dramatically. Moreover, student participation across all racial and ethnic groups has increased in excess of group growth in the U.S. population at large, most dramatically for Chicano/Mexican American females (308 percent). White male participation has increased least (79 percent). Female participation in the program is increasing, and the gender gap is widening; over the last decade, across all ethnic groups, more females have taken AP examinations than males. In 1999 the gap was greatest for blacks and least for whites, American Indians, and Asians.

The male/female ratio differs substantially according to subject, however. For example, males were overwhelmingly represented in computer science and physics courses in 1999, while females were much more likely to take French language and psychology courses. With regard to scores on AP examinations, the gender differences across ethnicity varied considerably: there was

little gender difference in the English literature and composition exam scores, but considerable difference in the scores for the biology and calculus exams, with males scoring higher. The gap was greatest on the biology exam for Hispanics.

Educational Attainment

High School Completion. The overall high school completion rate for adults age 25-29 was 88 percent in 1998, up from 38 percent in 1940, 75 percent in the '60s, and 85 percent at the end of the '70s. The rate in 1998 for females was 90 percent; for males, 87 percent.

Since the early 1980s, more white females than males completed four or more years of high school. The trends for other racial and ethnic groups have been less clear. Gender differences have shown little consistency in the ratio of black males to females since 1974, with no difference at all in 1998, when both males and females had an 88 percent completion rate. For Hispanics, the pattern has also been erratic, but since the early 1980s more females than males completed high school, and, in 1998, 66 percent of females did so, as contrasted with 60 percent of males.

Completion of Four Years of College. In 1998 the completion rate was 27 percent of all adults age 25-29, 29 percent of females, and 26 percent of males. This rate compares with 6 percent in 1940 and 21 percent in 1974. The increase for females over the past 25 years was very substantial—almost 12 percentage points—whereas the increase for males was only 2 percentage points. Moreover, any previous male advantage—nearly none for blacks, slight for Hispanics, and fairly large for whites—has been erased: black females have a 3 percentage point advantage; Hispanic females, 2 percentage points; and white females, 4 percentage points.

There is still a substantial race and ethnicity gap, however, with the completion rate for whites at 28 percent; blacks, 16 percent; and Hispanics, 10 percent.

Conclusion

The issue of gender difference in academic outcomes, as demonstrated by Coley's analysis reported above (as well as his additional findings on employment and earnings not summarized in this digest), is quite complicated. The lack of conclusive findings about a gender gap in achievement, as measured by standardized tests, suggests that there is no systematic disenfranchisement of students of either sex, although traditional gender differences in both course selection and subject-specific achievement persist. Differences in educational access and attainment among students of different ethnicities and races are more clearcut, however. Whites are still far more likely to take college preparatory courses in high school and to complete college, and thus to have advantages that other students do not have.

Efforts to ensure the fairness of some measures, such as standardized tests, in determining the knowledge and skills of all students have increased in recent years. Nevertheless, student differences—the result of the interplay of numerous factors, including but not limited to gender, race, and ethnicity—inevitably render some tests unfair to some students at some times. Further, even standardized tests intended to measure specific student outcomes fairly may not render an accurate assessment of a student's overall competency in general or his or her full mastery of the subject tested. Therefore, to increase the likelihood that the assessment of each student will be fair, and will reflect the student's performance as it relates to overall educational objectives, several different types of measures should be used and considered together (Willingham & Cole, 1997).

While attempts are being made to eliminate educational inequities, the findings in the two ETS studies suggest that more intensive effort is needed, particularly with black and Hispanic males whose lag behind females in college completion is notable. In addition, since males and females are still choosing courses in sexually stereotyped ways, limiting their higher education and career options, all students need to be helped to make their selections with a more open mind. Thus, while educators need to take remedial action when a preponderance of students in a single ethnic or gender group are lagging behind students in other groups, it is perhaps even more important for them to assess the strengths and weaknesses of students individually. Such personal attention can help ensure that each can successfully take advantage of all available educational opportunities.

References

Coley, R. (2001). *Differences in the gender gap: comparisons across racial/ethnic groups in education and work*. Princeton: Educational Testing Service, Policy Information Center. Available: http://www.ets.org/research/pic

Willingham, W.W., & Cole, N.S. (1997). *Gender and fair assessment*. Mahwah: NJ: Erlbaum. (ED 416 293)

Additional Resources

Differences in the Gender Gap cites several publications that also report on gender differences in education:

Kimura, D. (1999). *Sex and cognition*. Cambridge: MIT Press. (ED 438 909)

U.S. Department of Education, National Center for Education Statistics. (2000). *The condition of education, 2000* (NCES 2000-062). Washington, DC: U.S. Government Printing Office. (ED 437 742)

U.S. Department of Education, National Center for Education Statistics. (2000). *Trends in educational equity of girls and women* (NCES 2000-030). Washington, DC: U.S. Government Printing Office. (ED 440 210)

The following web sites provide a list of print and Internet materials on gender equity in education:

U.S. Department of Education:
http://www.ed.gov/offices/ODS/g-equity.html

American Association of University Women:
http://www.aauw.org/1000/geneqrsc.html

Education Week:
http://www.edweek.org/context/topics/issuespage.cfm?id=34

This Digest was developed by the ERIC Clearinghouse on Urban Education, with funding from the Office of Educational Research and Improvement, U.S. Department of Education, under contract no. ED-99-CO-0035. The opinions in this Digest do not necessarily reflect the position or policies of OERI or the Department of Education.

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